



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,535	09/01/2006	Roland Martin	MERCK-3224	2981
23599 7590 05/17/2010 MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201				
EXAMINER SMITH, JENNIFER A				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
05/17/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

# Office Action Summary

**Application No.**

10/591,535

**Applicant(s)**

MARTIN, ROLAND

**Examiner**

JENNIFER A. SMITH

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-22 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 09/01/2006, 02/04/2010  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of Application***

Claims 1-22 have been amended and are pending and presented for examination.

### ***Foreign Priority***

Receipt is acknowledged of foreign papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statement filed 09/01/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The information disclosure statement (IDS) submitted on 02/04/2010 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 recites the limitation "the furnace sand" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claims 13-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 (and dependent claims 14-22) provides for the use of LCDs, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-22 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under

35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-5 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaida et al. (Japanese Patent Publication No. 2000-084531).**

In regard to claims 1-3, the Kaida reference teaches a method that includes feeding crushed liquid crystal panel displays into a nonferrous smelting furnace and heat treating to about 1200°C. Glass contained in the crushed waste is used for iron removing treatment in the nonferrous smelting furnace (material recycling) and organic matter such as the polarizing plates and liquid crystals acts as combustion material and is thermally recycled [See Abstract].

In regard to claims 4-5, the LCDs that make up the crushed feedstock that is fed to the furnace of the Kaida reference contain metal elements such as indium tin oxide, chromium metals, tantalum, aluminum, or titanium [See Paragraph 0028 and 0029].

In regard to claim 7, the Kaida reference teaches silica contained in the LCD system is used to remove impurities from the furnace. Impurities (for example, iron) which exist in a non-iron refining furnace can be removed by supplying the crushed LCD material, since the liquid crystal panel contains  $\text{SiO}_2$  to some extent [See Paragraph 0082].

In regard to claim 8, the Kaida reference teaches organic films and sealing materials present in the LCD structure [See Paragraph 0018]. The structure is shred and/or crushed. Waste liquid crystal panels are made into a finer size and shape which is easy to process in refining furnace. Therefore by carrying out the recycle processing of the crushed waste in a refining furnace, crushed waste can be processed in large quantities and the reduction efficiency of an impurity can be raised [See Paragraph and 0015 and 0020].

In regard to claim 9, Kaida et al. teach organic matters, such as a polarizing plate and a liquid crystal, are contained in a crushed liquid crystal panel and such organic matter serves as a combustion material. Therefore the furnace can be heated with energy savings [See Paragraph 0016].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaida et al. (Japanese Patent Publication No. 2000-084531) in view of Sumimoya et al. (Japanese Patent Publication No. 2001-198565).**

In regard to claim 6, the Kaida reference fails to teach the separation of the non-noble metals from the noble metals.

Sumimoya et al. is drawn to a treatment method for LCDs. LCDs are processed in a furnace and the products are separated into glass, metal, electronic parts and tar. The obtained glass and metal are reused, and gold and other metals are taken out of the electronic parts, and further the tar is used as fuel [See Abstract].

One of skill in the art, at the time of Applicants' invention would have been motivated to separate the non-noble metals from the noble metals because at

temperatures that fuse other metals, noble metals such as gold and copper do not fuse [See Paragraph 0019] and these metals, with are costly and desirable recycled materials, can be recovered .

**Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaida et al. (Japanese Patent Publication No. 2000-084531) in view of Gaedcke et al. (US Patent No. 5,496,403).**

In regard to claim 10, the Kaida reference teaches heat treatment of LCDs in a furnace but does not teach the preferred furnace type.

Gaedcke et al. is drawn to a production process operated at 800-1400°C [See Column 1, lines 2—31] in a rotary type furnace [See Abstract].

One of ordinary skill in the art, at the time of Applicants' invention, would have been motivated to perform the LCD thermal treatment process taught in the Kaida reference in a rotary-type furnace because it is virtually impossible to obtain a uniform temperature over the entire layer thickness of a mixture using heated ovens, for example hearth-type, pusher-type and tunnel furnaces. Rotary furnaces do not have this disadvantage [See Gaedcke, Column 1, 31-40].



In regard to claims 11 and 12, the claimed process steps would inherently be present in the process taught by Kaida. Because the LCD material is heat treated in a similar manner, one of skill in the art would expect the presence of the "protective film" and the silicate-containing materials that are parts of the LCD raw material.

### ***Conclusion***

Claims 1-22 are rejected.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. SMITH whose telephone number is (571)270-3599. The examiner can normally be reached on Monday - Thursday, 9:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/  
Supervisory Patent Examiner, Art Unit 1793

Jennifer A. Smith  
Art Unit 1793  
May 3, 2010